Arch and visceral debranching combined with endovascular repair for thoracoabdominal aortic aneurysm (TAAA)

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Disclosure

Speaker name:

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I have the following potential conflicts of interest to report:

- Consulting
- Employment in industry
- Stockholder of a healthcare company
- Owner of a healthcare company
- Other(s)

I do not have any potential conflict of interest
- A 53-year-old male presented with chest pain, hemoptysis and hypotension.
- CT scan showed ruptured thoracic part of TAAA and very short proximal landing zone.
- The emergency arch debranching combined with endovascular repair for thoracic part of TAAA was initially performed.
- Ascending aorta-to-brachiocephalic and left carotid artery bypass was performed.
- Left subclavian artery was ligated because of unstable hemodynamic condition.
Two months after the first operation, visceral debranching combined with endovascular repair for abdominal part of TAAA was performed.
Right common iliac artery-to-right renal artery-to-common hepatic artery bypass.
Left common iliac artery-to-left renal artery-to-SMA bypass
No endoleak
The operative time : 7 hr. 30 min.
EBL : 700 ml.
Contrast used : 75 ml
Flu-time : 10 minutes.
CTA at one month showed

- no endoleak
- no bypass grafts occlusion
- dissection of right external iliac artery.

The patient denied for iliac stenting.
- At 15 months follow-up, the problem was intermittent minimal hemoptysis and the patient received close follow-up.
- CTA and angiography with iliac stenting were performed.
CTA showed shrinkage of the aneurysm sac.
No bypass grafts occlusion
Iliac stenting
Review of the literature

- Operative mortality and morbidity of standard open repair for TAAA have improved significantly at selected centers, but the overall national data of mortality rate approaching 20%.

- The hybrid repair for TAAA offers an alternative technique as it avoids a thoracotomy, high aortic cross clamping, single lung ventilation, and prolong visceral and renal ischemia.

- The performance of the procedure under stable hemodynamic conditions reduces the risk of paraplegia or paraparesis.
The meta-analysis for 30-day/in-hospital mortality rate was 14.3%

- mean follow-up period : 34.2 months.
- SCI : 7% , irreversible paraplegia : 4.4%
- Endoleak : 21.1%.
- Respiratory complication : 7.8%
- Cardiac complications : 4.6%.

*Ann Cardiothorac Surg 2012*
- 5-year patency rate of all grafts: 86.1%
- Hepatic grafts: 100%
- SMA: 88.8%
- Left renal a.: 87.2%
- Right renal a.: 69.6%
30-day/in hospital mortality rates: 8.5%

- Stroke: 0%
- Permanent SCI: 4.3%
  (0% in staged repair)

Advantage of staged repair:
- Shorter combined operative times
- Lower blood loss
- Not follow by contrast administration
- More likely to be extubated in the operating room

*J Vas Surg 2012*
Meta-analysis study

Lower perioperative mortality: staged repair

** P values: not significant

Single-stage procedure

: large aneurysms

: symptomatic aneurysms

J Vas Surg 2013
Conclusions

- unfit patients
- unsuitable anatomy
- not available for totally endovascular repair

- Hybrid repair should be the good option.
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